CLAIMS

1. A pierce nut installation apparatus, comprising:

a pierce nut feed passage receiving pierce nuts each having a bore therethrough for installation by said pierce nut installation apparatus in a panel;

a plunger passage communicating with said feed passage receiving said pierce nuts from said feed passage; and

a plunger reciprocating through said plunger passage having an end portion engaging and installing said pierce nuts in a panel opposite said plunger passage, said end portion of said plunger including a generally cylindrical guide portion axially projecting from said end portion of said plunger received in said bore of said pierce nuts having an outer diameter substantially equal to an internal diameter of said bore of said pierce nuts preventing cocking of said pierce nuts in said plunger passage and accurately locating a pierce nut on said panel.

2. The pierce nut installation apparatus as defined in Claim 1, wherein said generally cylindrical guide portion is removably attached to said end portion of said plunger.

3. The pierce nut installation apparatus as defined in Claim 2, wherein said generally cylindrical guide portion is threadably attached to said end portion of said plunger.

4. The pierce nut installation apparatus as defined in Claim 1, wherein said end portion of said plunger is planar and includes a threaded axial opening and said generally cylindrical guide portion including a male threaded end portion threadably received in said threaded axial opening.

5. The pierce nut installation apparatus as defined in Claim 1, wherein said generally cylindrical guide portion is frustoconical having a major diameter at said end portion of said plunger substantially equal to said internal diameter of said bore of said pierce nuts.

6. The pierce nut installation apparatus as defined in Claim 1, wherein said generally cylindrical guide portion is formed of a hard polymer.

7. The pierce nut installation apparatus as defined in Claim 6, wherein said generally cylindrical guide portion is frustoconical having a major axis at said end portion of said plunger greater than said internal diameter of said bore of said pierce nuts.

8. The pierce nut installation apparatus as defined in Claim 7, wherein said frustoconical guide portion has a taper of between three and seven degrees.

9. The pierce nut installation apparatus as defined in Claim 7, wherein said frustoconical guide portion has an axial length less than an axial length of said bore of said pierce nuts.

10. The pierce nut installation apparatus as defined in Claim 6, wherein said plunger is formed of steel including a planar end face having an axial threaded bore and said generally cylindrical guide portion is threadably received in said threaded axial bore.

11. A pierce nut installation apparatus, comprising:

a pierce nut feed passage receiving pierce nuts each having a threaded bore therethrough for installation by said pierce nut installation apparatus in a panel;

a plunger passage communicating with said feed passage receiving pierce nuts from said feed passage; and

a plunger reciprocating through said plunger passage having a generally planar end face engaging pierce nuts received in said plunger passage and installing said pierce nuts in a panel opposite said plunger passage, said planar end face having an axial bore and a generally cylindrical guide element releasably retained in said axial bore of said plunger and projecting from said end face to be received in said bore of said pierce nuts having an outer diameter substantially equal to an internal diameter of said bore of said pierce nuts, said generally cylindrical guide element preventing cocking of said pierce nuts in said plunger passage and accurately locating said pierce nut on said panel.

12. The pierce nut installation apparatus as defined in Claim 11, wherein said axial bore in said planar end face of said plunger is internally threaded and said generally cylindrical guide element having a male threaded end portion threadably received in said axial bore of said plunger.

13. The pierce nut installation apparatus as defined in Claim 11, wherein said generally cylindrical guide element is frustoconical having a major diameter at said planar end face of said plunger.

14. The pierce nut installation apparatus as defined in Claim 13, wherein said generally cylindrical guide element is formed of a hard polymer.

15. The pierce nut installation apparatus as defined in Claim 14, wherein said major diameter of said generally cylindrical guide element is greater than said internal diameter of said threaded bore of said pierce nuts.

16. The pierce nut installation apparatus as defined in Claim 14, wherein said generally cylindrical guide element has a taper of between three and seven degrees.

17. A pierce nut installation apparatus, comprising:

a pierce nut feed passage receiving pierce nuts each having a bore therethrough for installation by said pierce nut installation apparatus in a panel;

a plunger passage communicating with said feed passage receiving pierce nuts from said feed passage; and

a plunger reciprocating through said plunger passage having a planar end face engaging pierce nuts received in said plunger passage and installing said pierce nuts in a panel opposite said plunger passage, said planar end face of said plunger including an axially extending frustoconical guide portion having a major diameter adjacent said planar end face substantially equal to an internal diameter of said bore through said pierce nuts, said axially extending frustoconical guide portion received in said bore of said pierce nuts during installation of a pierce nut by said plunger preventing cocking of said pierce nut in said plunger passage and accurately locating said pierce nut on said panel.

18. The pierce nut installation apparatus as defined in Claim 17, wherein said axially extending frustoconical guide portion is releasably retained on said planar end face of said plunger.

19. The pierce nut installation apparatus as defined in Claim 18, wherein said planar end face of said plunger includes an axial threaded bore and said axially extending frustoconical guide portion includes a male threaded portion threadably received in said axial threaded bore.

20. The pierce nut installation apparatus as defined in Claim 17, wherein said axially extending frustoconical guide portion is formed of a hard polymer.